

1/2 014 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--RADIOPROTECTIVE ACTION OF SOME ANTIOXIDANTS OBTAINED FROM PETROLEUM  
PRODUCTS -U-  
AUTHOR--(04)-KAREYEV, A.I., GASANOV, G.I., MEKHTIYEVA, S.M., SHAKHGELOIYEV,  
M.  
COUNTRY OF INFO--USSR  
SOURCE--BIOL. NAUKI 1970, (5), 47-55  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--RADIOPROTECTIVE ACTION, GASOLINE ANTIOXIDANT, PETROLEUM  
PRODUCT  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3009/0190 STEP NO--UR/0325/70/000/005/0047/0055  
CIRC ACCESSION NO--AP0139053

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139053

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OF 5 AROMATIC QUATERNARY AMMONIUM SALTS TESTED, ONLY N,N,DIMETHYL,N, PROPYL,(2, HYDROXY, 5, BUTYL) BENZYLAMINE WAS APPRECIABLY RADIOPROTECTIVE, AS INDICATED BY ITS EFFECT ON THE OXIDN.-REDN. POTENTIAL OF THE TIBIAL TRICIPITAL MUSCLE OF IRRADIATED RATS, THE RATE OF BETA-CAROTENE OR OLEIC ACID OXIDN. IN VITRO, AND ON THE SURVIVAL RATE OF IRRADIATED RATS. OF 8 PHENOL DERIVS. TESTED, ONLY O,TERT,BUTYL,P,METHOXYPHENOL OR A MIXT. OF THIS AND M,TERT,BUTYL,P,METHOXYPHENOL WERE RADIOPROTECTIVE BY THESE CRITERIA.  
FACILITY: INST. FIZIOL., BAKU, USSR.

UNCLASSIFIED

USSR

UDC 518.517.948

GUSEYNOV, A. I., Academician of the Academy of Sciences, Azerbaidzhan SSR,  
GASANOV, G. M., Institute of Mathematics and Mechanics, Academy of Sciences  
of the Azerbaidzhan SSR, Baku

"On an Evaluation of the Error in Approximate Solutions to a Linear Integral  
Equation"

Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 6, 21 Aug 73, pp 1270-1272.

Abstract: The study of convergence by the method of collocation for integral equations has led primarily to uniform and mean square metrics for the corresponding assumptions with respect to the kernel and absolute term of a given equation. The authors use the method of collocations based on the interpolation process to obtain approximate solutions of a linear integral equation. Using some properties of the Hausdorff metric and the approximation of a function with respect to this metric, they establish evaluations of error in the approximate solutions in the metric of a space of summable functions; the evaluations obtained are expressed by a modulus of non-monotonicity of the kernel and absolute term of the equation.

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USSR

GASANOV, G. T., SADYKHOV, B. O., and MEKHTIYEV, A. K., Azerbaijan  
Polytechnical Institute

"A Problem in the Nonstationary Motion of a Viscous Liquid"

Baku, Izvestiya Akademii Nauk Azerbaydzhanskoy SSSR, Seriya Fiziko-  
tekhnicheskikh i Matematicheskikh Nauk, No 3, 1972, pp 93-98

Abstract: In connection with the problem of the motion of a vis-  
cous liquid through a tube with permeable walls, the authors the-  
oretically consider a nonstationary, rectilinear, parallel motion of  
two viscous fluids between two coaxial cylindrical tubes, under  
the assumption that the tube of lesser radius is concentrically im-  
mersed, with a specified velocity, in the cylindrical tube of larger  
radius. They begin their solution by finding the change in pres-  
sure on the end face of the immersed cylinder, in the presence of  
the layer adjacent to the wall of the larger cylinder, for a known im-  
mersion velocity. The solution is then found by solving a system  
of two partial differential equations, both of which are given.

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USSR

UDC 621.382.2

GASANOV, I.S., LESHEVY, A.S., PETROVSKIY, V.I.

"Study Of Voltage-Capacitance Characteristics Of Amorphous Structures Based On Glassy Semiconductors"

Elektron. tekhnika. Nauch.-tehn. sb. Mikroelektronika (Electronics Technology. Scientific-Technical Collection. Microelectronics), 1971, No 5(29), pp 31-34 (from RZh: Elektronika i yeye primeneniye, No 2, Feb 72, Abstract No 23164)

Translation: The low-signal capacitance is experimentally investigated of amorphous structures based on chalcogenide glass of the systems As-Te-Si-Ge, Si-Te, Ge-Te, and some glassy semiconductors of type  $A^{II}B^{IV}C_2$ . It is revealed that during stresses, the capacitance of such structures becomes negative. A strong dependence is shown of the negative capacitance on the temperature and the frequency of the signal measured. Summary.

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USSR

UDC 621.382.322(088.8)

GASANOV, L.S.

"Thin-Film Field-Effect Triode"

USSR Author's Certificate No 259283, filed 25 Apr 67, published 24 Apr 70 (from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2B250P)

Translation: The construction and principles of operation are proposed for a film triode with inverse conduction, based on semiconductor materials with a wide band of forbidden energies. The triode has the symmetrical structure metal--dielectric--semiconductor--dielectric--metal and the thin layer of semiconductor is smaller than the Debye shielding distance. The voltampere characteristic of the triode has a U-shaped form with a minimum current. 2 ill. V.K.

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1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--TRAPPING LEVELS IN HETEROGENEOUS SYSTEMS STUDIED BY MEANS OF  
THERMOSTIMULATED CURRENTS -U-  
AUTHOR--(02)-GASANOV, O.K., IZVOZCHIKOV, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 375-7  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--PHYSICS  
  
TOPIC TAGS--ELECTRON TRAPPING, PN JUNCTION, SILVER, LEAD OXIDE, TIN OXIDE,  
PHOTOELECTROMOTIVE FORCE, ELECTRON TRAP, SEMICONDUCTOR MATERIAL  
  
CONTROL MARKING--NO RESTRICTIONS  
  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1996/1853 STEP NO--UR/0449/70/004/002/0375/0377  
CIRC ACCESSION NO--AP0118817  
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0118817

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SANDWICH FILMS (AG-PRO-SND SUB2; WITH P-N OR P-I-N JUNCTIONS), HAVING PHOTOEMF, 0.2 AND 0.5 V, AT 77 AND 300DEGREESK, RESP., WERE STUDIED AT 77-350DEGREESK. THE METHOD USED MAKES IT POSSIBLE TO DET. BOTH DISCRETE LEVELS AND QUASICONTINUOUS GROUPS OF TRAPS (NAMELY 0.16 AND 0.2, 0.31, 0.58, 0.65, AND 0.67 EV, RESP.). IF A BIAS VOLTAGE IS APPLIES, THE ELECTRON TRAPS CAN BE DISTINGUISHED (0.16, 0.31, AND 0.65 EV IN THIS CASE). FACILITY: LENINGRAD. GOS. PEDAGOG. INST. IM. GERTSENA, LENINGRAD, USSR.

UNCLASSIFIED



1/2 031 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--EFFECT OF AN ELECTRIC FIELD AND ILLUMINATION ON THE KINETICS OF THE  
PHOTOCONDUCTIVITY OF LEAD OXIDE LAYERS -U-  
AUTHOR-(04)-GASANOV, D.K., IZVOZCHIKOV, V.A., KOZLOV, V.A., TIMOFEYEV,  
O.A.  
COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 558-60

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--LEAD OXIDE, ELECTRIC FIELD, PHOTOCONDUCTIVITY, LAMINATED  
STRUCTURE, CRYSTAL ORIENTATION, PN JUNCTION, TIN OXIDE, SILVER,  
RELAXATION PROCESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1988/0099

STEP NO--UR/0449/70/004/003/0558/0560

CIRC ACCESSION NO--AP0105185

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--23OCT70  
 CIRC ACCESSION NO--AP0105185  
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PBO LAYERS WITH AG STRIPE  
 ELECTRODES WERE INVESTIGATED IN THE TRANSVERSE REGIME (LIGHT BEAM  
 PERPENDICULAR TO THE ELEC. FIELD) AND SUB2-PBO-AG SANDWICH LAYERS IN  
 THE LOGITUDINAL REGIME. THE PBO LAYERS WERE 1-10 MU THICK AND WERE  
 EVAPD. IN VACUO AT LESS THAN 10 PRIME NEGATIVE 2 MM HG. DURING THE  
 VACUUM ANNEAL, A P-N JUNCTION WITH A HIGH OHMIC INTRINSIC REGION WAS  
 FORMED IN THE SANDWICH SAMPLES. APART FROM THE NORMAL PHOTOCOND.  
 RELAXATION MECHANISM AFTER SWITCHING OFF THE LIGHT, THERE WAS A TYPICAL  
 "OVERSHOOTING" IN THE INITIAL PART OF THE RELAXATION CURVES. IN THE  
 TRANSVERSE SAMPLES, THIS OVERSHOOTING INCREASED WITH INCREASING VOLTAGE,  
 WHILE IN THE LOGITUDINAL ONES IT DECREASED; IN STRONG FIELDS, THIS  
 OVERSHOOTING BECAME S SHAPED. IN THE TRANSVERSE SAMPLES, THE  
 OVERSHOOTING IS DUE TO CHARGE REDISTRIBUTION AMONG THE IMPURITY CENTERS  
 DURING THE ILLUMINATION, AND THE S SHAPE IS A CONSEQUENCY OF TRAPING  
 EFFECTS DURING THE GENERATION PROCESS. THE VOLTAGE DEPENDENCE OF THE  
 EFFECT IS DUE TO THE VOLTAGE DEPENDENCE OF THE SPACE CHARGE D. AROUND  
 THE ELECTRODES. IN THE LOGITUDINAL SAMPLES, THE MECHANISM IS EXPLAINED  
 BY THE PECULIARITIES OF THEIR P-I-N STRUCTURE. FACILITY:  
 LENINGRAD. GOS. PEDAGOG. INST. IM. GERTSENA, LENINGRAD, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--PHYSICAL PROPERTIES OF AGTLTE SUB2 AND CUTLTE SU02 IN SOLID AND  
LIQUID STATES -U-  
AUTHOR-(02)-GASANOV, S.A., MAGOMEDOV, YA.B. G  
COUNTRY OF INFO--USSR  
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(4), 820-2  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, PHYSICS  
TOPIC TAGS--SILVER COMPOUND, COPPER COMPOUND, THALLIUM, TELLURIUM,  
ELECTRIC CONDUCTIVITY, ELECTROMOTIVE FORCE, PHONON, IMPURITY  
SEMICONDUCTOR  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1538 STEP NO--UR/0363/70/006/004/0820/0822  
CIRC ACCESSION NO--AP0125166  
UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125166

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELEC. COND., THERMAL EMF., AND THERMAL COND. OF CUTLITE SUB2 AND AGTLTE SUB2 AT 300-950DEGREESK WERE STUDIED TO REVEAL THE MECHANISM OF ELEC. AND HEAT TRANSFER OF THESE COMPS. AT HIGH TEMPS. IN THE SOLID AND LIQ. STATES, AND TO DET. THE POSSIBILITY OF THEIR PRACTICAL APPLICATION IN THERMOELEC. DEVICES. THE COMPS. TO BE STUDIED WERE PREPD. BY DIRECT MELTING OF THE COMPONENTS IN STOICHIOMETRIC RATIO. THE ELEC. COND. AND THERMAL EMF. CURVES SHOW THAT AGTLTE SUB2 IS AN IMPURITY SEMICONDUCTOR ALL THE WAY UP TO THE M.P., WHEREAS IN CUTLITE SUB2, INTRINSIC COND. SETS IN AT 100DEGREES BELOW THE M.P. ON TRANSITION FROM THE SOLID TO THE LIQ. STATE, THE ELEC. COND. OF BOTH COMPS. INCREASED SLIGHTLY, AND THE THERMAL EMF. DECREASES. THE MELTS OF BOTH COMPS. BEHAVE AS INTRINSIC SEMICONDUCTORS, WITH THE WIDTH OF THE FORBIDDEN BAND BEING 0.47 EV FOR AGTLTE SUB2 AND 0.21 EV FOR CUTLITE SUB2. SHORT RANGE ORDER IS RETAINED IN BOTH THE SOLID AND LIQ. STATES. THE THERMAL COND. OF BOTH COMPS. IN THE SOLID STATE DECREASES WITH THE TEMP.; ON MELTING, IT INCREASES ABRUPTLY AND IN THE LIQ. STAT IT THEN CONTINUES TO INCREASE LINEARLY. IN THE SOLID STATE IN THE IMPURITY COND. REGION, THE THERMAL COND. IN CUTLITE SUB2 AND AGTLTE SUB2 IS BROUGHT ABOUT BY PHONONS AND CURRENT CARRIERS, WHEREAS IN THE LIQ. STATE, BIPOLAR THERMAL COND. IS OBSD. FACILITY: INST. FIZ. DAGESTAN. FILIALA, MAKHACHKALA, USSR.

UNCLASSIFIED

USSR

GASANOV, Sh. M., Professor

"'The Zone of Health' -- A New Type of Medical Establishment for Large-Scale Improvement of Public Health"

Baku, Azerbaydzhanskiy Meditsinskiy Zhurnal, No 4, Apr 70, pp 43-48

Abstract: The fact that human beings are not biologically adapted to the rapid tempo, noise and pressures of urban industrial society accounts for the increase in cardiovascular and nervous disturbances. A "Zone of Health" has therefore been established in Baku to restore the natural healthy condition. The facility includes beautiful parks and a seashore. Games and cultural and esthetic opportunities are provided and various types of therapy are administered. The "Zone of Health" provides 28 kinds of natural therapy including: climatotherapy, kinestherapy, diet therapy, phototherapy, many kinds of hydrotherapy, esthetotherapy, and psychotherapy. During 1969, 142,000 patients of all ages and backgrounds were treated, and some 98% of them went home healthy. The center received 694 foreign visitors during the year. It is suggested that additional "Zones of Health" be established in other areas.

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USSR

UDC: 51:330.115

YANBYKH, G. F., GASANOV, S. S., KOZLOV, V. I.

"Optimizing the Structure of an Automated System for Selling Airplane Tickets"

V sb. Tekhn. kibernetika. Vyp. 16 (Technical Cybernetics--collection of works, No 16), Kiev, 1970, pp 57-65 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V671)

[No abstract]

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1/2 032 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--FUNCTION OF THE AUDITORY SYSTEM IN INTERGRATIVE (CONDITIONED) BRAIN  
ACTIVITY -U-  
AUTHOR--GASANOV, U.G. G  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL VYSSHEY NERVNOY DEYATEL'NOSTI, 1970, VOL 20, NR 2, PP  
422-430  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--CAT, EYE, CONDITIONED REFLEX, NEUROPHYSIOLOGY, HAZARDOUS SOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1988/1700 STEP NO--UR/0247/70/020/002/0422/0430  
CIRC ACCESSION NO--AP0106443  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0106443

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTS WERE CARRIED OUT ON CATS WITH POSITIVE AND INHIBITORY CONDITIONED EYE LID REFLEXES ELABORATED IN RESPONSE TO NOISE BURSTS OF DIFFERENT DURATION (UP TO 7 MSEC). THE THRESHOLDS AND FORM OF EVOKED RESPONSES IN THE AUDITORY CORTEX, THE POSTERIOR COLLICULI, THE MEDIAL GENICULATE BODY, THE COCHLEAR NUCLEUS AND THE COCHLEA SERVED AS ELECTROGRAPHIC CHARACTERISTICS OF CONDITIONING. THE DATA OBTAINED ARE CONSIDERED IN RELATION TO NEUROPHYSIOLOGICAL MECHANISMS OF THE SOUND ANALYSIS BY ITS BIOLOGICAL PROPERTIES. TWO INTERDEPENDENT ANALYSIS PROCESSES ARE SUGGESTED. THE FIRST (RISE OF EXCITABILITY) IS DUE TO THE ESTABLISHMENT OF INTERCENTRAL CONNECTIONS, AND THROUGH THEM TO FUNCTIONAL INFLUENCES ON THE AFFERENT SYSTEM. THE SECOND PERTAINS TO THE SENSORY MECHANISMS PROPER, TO THOSE NEUROPROPER, TO THOSE NEURONAL MECHANISMS OF THE DISCRIMINATION OF THE SIGNAL PARAMETERS BY THEIR BIOLOGICAL SIGNIFICANCE WHICH COME INTO ACTION DUE TO THE FORMATION OF TEMPORARY CONNECTIONS.

FACILITY: INSTITUTE OF HIGHER NERVOUS ACTIVITY AND NEUROPHYSIOLOGY, USSR ACADEMY OF SCIENCES, MOSCOW.

UNCLASSIFIED



1/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--SYNTHESIS AND REACTIONS OF UNSATURATED ORGANOSILICON AND  
ORGANOGERMANIUM COMPOUNDS. SYNTHESIS OF DIMETHYL,P,TOLYLHYDRIDOSILANE  
AUTHOR--(04)--SHIKHIYEV, I.A., GASANOVA, R.YU., ASKEROV, G.F., RZAYEVA, S.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 817-19

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SYNTHESIS, ORGANOSILICON COMPOUND, ORGANOGERMANIUM  
COMPOUND, ORGANIC SILANE, ACETYLENE, ALCOHOL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/1199

STEP NO--UR/0079/70/040/004/0817/0819

CIRC ACCESSION NO--AP0128617

UNCLASSIFIED

2/2 011 UNCLASSIFIED PROCESSING DATE--20NOV70  
CIRC ACCESSION NO--AP0128617  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ME SUB2 SICLH (94.5 G) AND RMGBE  
FROM 24 G MG REFLUXED 2 DAYS GAVE AS SHOWN ON MICROFICHE.  
FACILITY: INST. NEFTI KHIM. IM. AZIZBEKOVA, BAKU, USSR.

UNCLASSIFIED

USSR

UDC 616.993.162-097.5

GASAN-ZADE, G. B., ALIYEV, E. I., and SAF'YANOVA, V. M., Scientific Research Institute of Medical Parasitology and Tropical Medicine imeni S. M. Kirov, Ministry of Health, Azerbaydzhan SSR, and All-Union Scientific Research Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Sciences USSR

"Detection of Specific Antibodies in Persons Convalescing From Cutaneous Leishmaniasis in Endemic Foci of Azerbaydzhan"

Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 5, 1971, pp 543-547

Abstract: Adler's phenomenon, as quantitated by Saf'yanova, was used as a serological test to detect specific antibodies to cutaneous leishmaniasis in 51 Azerbaydzhanis with a history of the disease. (Adler's phenomenon -- the presence of homologous antibodies -- markedly changes the growth of Leishmania cultures on nutrient media containing immune rabbit sera). Adler's method revealed the presence of group-specific antibodies to Leishmania of mammals. However, like other serological tests, it was not species-specific, for the results were virtually the same when cultures of different Leishmania species (L. tropica minor, L. tropica major, and L. donovani) were used as antigens.

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USSR

UDC 632.95

KULIYEV, A. M., ~~GASANZADE, G. R.~~, RASULOVA, M. A., ALIYEVA, R. G., and RASULOVA, F. A., Institute of Additive Chemistry of the Academy of Sciences Azerbaydzhan SSR

"Method of Producing Alkoxymethyl Esters of Dialkyldithiocarbamic Acids"  
USSR Authors' Certificate No 316687, Cl. C 07 c 135/04, filed 17 Dec 69,  
published 23 Dec 71 (from RZh-Khimiya, No 14, 25 Jul 72, Abstract No 14M470  
by T. A. Belyayeva)

Translation: Carbamic acid derivatives of the formula  $\text{ROCH}_2\text{SSCNet}_2$  (I)  
(R = alkyl or benzyl) which can be employed as pesticides are obtained by the  
reaction of alkali-metal salts of dialkyldithiocarbamic acids with the alpha-  
chloroether of aliphatic and aromatic alcohols in an organic solvent at 70-80°. One mole of alpha-chloroisobutyl ether is added to 1 mole of  $\text{Et}_2\text{NCSSNa}$  in  $\text{C}_6\text{H}_6$  at 70-80°, held for 5-8 hours, washed with water and dried; I is isolated by distillation (R = iso-Bu), yield 90-95%, boiling point 122-6°/1,  $d_4^{20}$  1.0393,  $n_D^{20}$  1.5375. The following I's are similarly produced (cited hereinafter are R, boiling point in °C/mm,  $d_4^{20}$ ,  $n_D^{20}$ ): Bu, 136-7/1, 1.0460, 1.5420,  $\text{C}_5\text{H}_{11}$ , 154-5/3, 1.0321, 1.5368;  $\text{C}_6\text{H}_{13}$ , 153-4/1, 1.0178, 1.5300;  $\text{C}_7\text{H}_{15}$ , 163-4/1, 1.0073, 1.5278,  $\text{PhCH}_2$ , 177-8/0.7, 1.1297, 1.5798  
1/1

USSR

G UDC 681.325.53

RAISOV, O. A., VASIL'YEV, V. M., GASHCHAK, P. S., SHALAMOV, G. P.

"A Device for Converting Binary-Decimal Numbers to Binary"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrazttsy, Tovarnyye Znaki, No 4, 1970, p 97, patent No 260962, filed 23 Dec 68

Abstract: This Author's Certificate introduces a device for converting binary-decimal numbers to binary. The unit contains a binary-decimal number register, a four-digit tetrad memory register, a tetrad counter, a memory register for results, a pulse distributor, delay lines, rectifiers, a single-digit adder, and a control circuit. As a distinguishing feature of the patent, the circuit is simplified and reliability is improved by connecting the inputs of the four-digit tetrad memory register to the outputs of the binary-decimal number register, tetrad counter, and pulse distributor, while the output of this register is connected to a rectifier which is tied at the output to one of the adder inputs to which the output of the memory register for the result is connected through another rectifier and a delay line. The memory register output is also connected to a third rectifier whose output is connected to the second input of the adder,

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USSR

UDC 681.325.53

RAISOV, O. A., et al., Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrazttsy, Tovarnyye Znaki, No 4, 1970, p 97. patent No 260962, filed 23 Dec 68

this input also being connected to the output of the memory register for the result through a fourth rectifier and delay lines. The adder outputs are connected to the inputs of the memory register for the result which is connected by its inputs to the distributor outputs. The control circuit is connected to the inputs of the distributor, rectifiers, and tetrad counter.

2/2

GASHECHKO, A.G.

Final / R 166/5-1000-73  
100072

VI. REVIEW SHEETING

Gashchenko, A. G. Statistical aspects  
of thermal stability of refractory materials.  
Problemy Prochnosti, no. 5, 1972, 79-82.

On the basis of test data on 60 corundum and 50 zirconium dioxide specimens, it was confirmed that the dispersion of destructive temperature differentials, which characterize the thermal resistance of refractory ceramic materials, is subject to the Weibull distribution. The variance of destructive temperature differential values under identical conditions of thermal loading ( $\sigma = \text{const}$ ) is higher than the variance of the limit stress values for mechanical loading, and the parameters  $m$  in the corresponding distributions may differ significantly. It was found that when investigating ceramic refractory materials, it is preferable to define the parameter  $m$  on the basis of

$$m' = \frac{D^2}{D^2 + \sigma^2}$$

Here  $d_n$  is dependent on the number of test specimens;  $D^2$  ( $\lg X$ )  $\sim \sqrt{D^2(\lg X)}$ , where  $D^2$  ( $\lg X$ ) is the unbiased value dispersion of the logarithm of random value  $x$ . This expression most completely depicts the influence of the statistical aspects of the breakdown kinetics.

US3R

UDC 615.216.6:547.331.8].002.1

KOZELLO, I. A., GASHINA, A. YA., AGLETSKAYA, K. V., and MURZIKIN, N. N.,  
All-Union Scientific Chemical-Pharmaceutical Research Institute Branch S.  
Ordzhonikidze, Ural Branch, Sverdlovsk

"Synthesis of 4[1H]-Quinolone Derivatives. II. 1-(N',N'-Dialkylaminoalkyl)-4-  
quinolones and Their Quaternary Salts"

Moscow, Khimiko-Farmatsevticheskii Zhurnal, Vol 6, No 4, Apr 72, pp 22-30

Abstract: A mixture of 1.45 g 4-hydroxyquinoline, 4.7% g  $\gamma$ -dimethylaminoethyl  
chloride hydrochloride (obtained from dimethylaminopropanol and thionyl chloride),  
and 50 ml absolute ethanol was refluxed for 10 hrs. The mixture was cooled and  
a sodium ethoxide solution prepared from 1 g sodium and 10 ml ethanol was added;  
the mixture was refluxed again for a long time, filtered, and evaporated. The  
residual oil was dissolved in ethanol and acidified with ethanolic HCl, pre-  
cipitating the crystalline dihydrochloride of 1-( $\gamma$ -dimethylaminoethyl)-4-  
quinolone, m.p. 260-262° (I). Similarly, the 1-( $\gamma$ -dimethylaminoethyl)- (II),  
and 1-( $\gamma$ -diethylaminoethyl)-4-quinolone (III), m.p. 249-250° and 250-252°,  
respectively, were obtained. To obtain the di-(methiodides) of these compounds,  
(I), (II), or (III) were dissolved in benzene, methyl iodide was added, the  
mixture was kept for 5 hrs at 35-40°, cooled, and benzene was evaporated. The  
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USSR

KOZELLO, I. A., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 4, Apr 73, pp 28-30

residual oil was suspended in alcohol, and the solid formed was filtered at 60° in the dark. The product -- di-(methiodides) of (I), (II), and (III) melt at 227-28°, 204°, and 205° respectively.

a/2

Organ and Tissue Transplantation

USSR

UDC 616.71-089.844

GASHIMOV, R. R., Laboratory of Pathophysiology, Scientific Research Institute  
of Roentgenology and Radiology

"Osteosynthesis by Preserved Transplants Subjected to gamma-Radiation"

Baku, Azerbaydzhanskiy Meditsinskiy Zhurnal, No 5, May 71, pp 24-27

Abstract: The biological properties and possibility of utilizing homologous 4-6 cm diaphysial bone transplants preserved for 20 days at a temperature of minus 70 degrees, then sterilized by gamma-rays and stored for 2-3 months in plastic at room temperature were studied in rabbits. Fractures were inflicted, one group of rabbits receiving transplants prepared by the described method, and another group, transplants similarly prepared but not sterilized with gamma-rays. X-rays were taken 1, 7, 14, 21, 30, 45, 60, and 90 days after the beginning of the experiment. It was found that transplants prepared by the above method are biologically active and participate in consolidation of the fractures. The development of an infection in the fracture area in one of rabbits of the second group, however, tends to indicate that sterilization by freezing alone does not always prevent infection.

1/1

1/2 011 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--EFFECT OF PAPAIN ON THE ORGANOLEPTIC AND PHYSICO CHEMICAL  
PROPERTIES OF BUFFALO MEAT -U-  
AUTHOR--(02)-SOLEVYEV, V.I., GASHIMOVA, L.G. 6  
COUNTRY OF INFO--USSR  
SOURCE--PRIKL. BIKHIM. MIKROBIOL. 1970, 6(2), 190-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--PROTEINASE, PROTEIN, ENZYME ACTIVITY, FOOD PREPARATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605059/810 STEP NO--UR/0411/70/006/002/0190/0195  
CIRC ACCESSION NO--AP0144227

UNCLASSIFIED

2/2 C11

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0144227

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PAPAIN HAD A CONSIDERABLE  
TENDERIZING EFFECT ON BUFFALO MEAT. OPTIMUM RESULTS WERE ATTAINED BY  
TREATING THE MEAT WITH 0.3-0.4 PERCENT PAPAIN SOLNS. AT 20 DEGREES AND  
KEEPING AT 0-4 DEGREES FOR 2 DAYS. THE PH OF THE MEAT DECREASED, AND THE  
AMT. OF BOUND MOISTURE AS WELL AS THE SOL. GLYCOGEN FRACTION INCREASED.  
FACILITY: ALL UNION RES. INST. MEAT IND., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr: ~~AP0043867~~ **GASHIMOVA** Ref. Code: **P. SH.** UR 0016

PRIMARY SOURCE: Zhurnal Mikrobiologii, Epidemiologii, i  
Immunobiologii, 1970, Nr 2, pp **37-42**

ISOLATION, PURIFICATION AND BIOCHEMICAL STUDY  
OF SURFACE ANTIGENS FROM S. STANLEY

P. Sh. Gashimova, R. N. Uvarova, L. K. Stepanova, K. K. Ivanov

The authors carried out a comparative biochemical analysis of superficial individual antigens of two representatives of salmonella, group B (S. stanley and S. paratyphi B). Antigens, isolated by water-salt extraction were purified and fractionated by gel filtration on Sephadex G-75 and G-200. The antigens represented phosphorylated protein-lipoid-polysaccharide complexes.

It was established that the qualitative composition of polysaccharide components of K-antigens was similar, and that polysaccharide components of O-antigens were also identical. One of the surface antigens — K-antigen contained galactose, glucose, xylose and traces of mannose, rhamnose and hexosamine, whereas O-antigen additionally contained a carbohydrate not present in the K-antigen. In difference from the polysaccharide of somatic O-antigen, surface O- and K-antigens of S. stanley and S. paratyphi B contained no heptose.

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USSR

UDC 621.315.592

ALIYEV, T. A., GASHIMZADE, F. M.

"Theory of Light Absorption by Free Carriers in Semiconductors with a Nonparabolic Band"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 458-461

Abstract: The coefficient of light absorption by free carriers in degenerate semiconductors with the Kane dispersion law was calculated considering the electron scattering on acoustic phonons, the polar optical lattice vibrations and the admixture ions. The matrix elements of the electron-phonon and electron-admixture scatterings were calculated in Bloch functions representing the solution of the Kane spectrum. No assumptions were made regarding the magnitude of the ratio  $\Delta/\epsilon_g$  where  $\Delta$  is the spin-orbital splitting of the valence bands, and  $\epsilon_g$  is the width of the forbidden zone of the semiconductor.

The effect of the nonparabolic nature on the frequency dependence of the absorption coefficient was analyzed qualitatively for different mechanisms of the electron scattering. There is a sharper decrease in the absorption coefficient with frequency for all three scattering mechanisms than in the case of the parabolic band. By constructing the graph of the absorption coefficient  $1/2$

USSR

ALIYEV, T. A., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 3, 1972, pp 458-461

as a function of frequency in explicit form using the presented dispersion law on a double logarithmic scale it is possible to determine the exponent of the frequency dependence of the absorption as was done earlier [Z. A. Demidenko, FTP, No 4, 2106, 1970]. In the two-band approximation the presented result agrees with the previous result in the case of polar optical scattering and it differs for acoustic scattering. The general conclusion regarding the increase in the exponent  $r$  in the function  $\alpha \sim \lambda^r$  where  $\lambda$  is the wavelength of the light remains valid for all the investigated scattering mechanisms. With proper consideration of the nonparabolic nature of the band in the matrix element of scattering of the electrons on acoustic phonons the exponent  $r$  increases but remains less than two, which does not agree with E. Haga [E. Haga, et al., J. Phys. Soc. Japan, No 18, 777, 1963]. The presented matrix elements must also be used for calculating the various kinetic coefficients [T. A. Aliyev, et al., Izv. AN AzSSR, ser. fiz.-tekh. i mat. nauk, No 4, 98, 1970].

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USSR

UDC 621.315.592

SALAYEV, E. YU., GASHIMZADE, F. M., KHALILOV, V. KH.

"Interband Faraday Effect in GaSe"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 261-266

Abstract: A study was made of the Faraday effect near the absorption edge of hexagonal GaSe. The effect of indirect forbidden transitions on the dispersion curves of the Faraday rotation was considered, and this contribution to the total rotation of the polarization plane for  $E \perp C$  caused basically by direct allowed transitions was quantitatively taken into account. The value of  $|p_{cv}^x|^2$  in the case of direct allowed transitions was estimated on the basis of the paper by J. M. Boswarva, et al. [Proc. Roy. Soc., London, No A269, 125, 1962] ( $|p_{cv}^x|^2$  is the square of the matrix element of the pulse operator  $\hat{P}$ ).

The dispersion curves of the Faraday rotation have a complex nature and can be explained under the assumption that the Faraday rotation is caused both by direct allowed transitions and indirect forbidden transitions. The formula for the Faraday rotation in the case of indirect forbidden transitions is presented first, and from analysis of the Faraday rotation, the width of the forbidden band and the magnitude of the matrix element in the case of direct allowed transitions are determined. The dispersion curves of the rotation of the polarization plane were measured in the 1.4-2.1 electron volt range at temperatures 1/2



USSR

SALAYEV, E. YU., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 2, 1972, pp 261-266

of 300 and 120° K for various thicknesses of the samples. Curves are presented for samples 0.0047 and 0.0580 cm thick. The measurements were performed with orientation of the samples E | C in a magnetic field of  $\approx 14$  kilogauss. The curves for the different thicknesses of the samples are shifted relative to each other. The mechanism of this effect is explained.

2/2

150 -

1/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--EVALUATION OF THE CONTRIBUTION OF MEMBERS OF E PRIME2 G ORDER TO  
THE ANOMALOUS MAGNETIC MOMENT OF THE MU MESON -U-  
AUTHOR--GASHKENBEYN, B.V.  
COUNTRY OF INFO--USSR .  
SOURCE--PISMA ZH. EKSP. TEOR. FIZ. 1970, 11(6), 309-12  
DATE PUBLISHED-----70  
  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--ELECTROMAGNETIC INTERACTION, MAGNETIC MOMENT, MUON, MESON  
INTERACTION, BOSON, GAMMA RAY  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1994/1237 STEP NO--UR/0386/70/011/006/0309/0312  
CIRC ACCESSION NO--AP0115254  
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0115254

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONTRIBUTION OF THE E PRIME<sup>2</sup> G TERMS (G EQUALS INTERACTION CONST., E EQUALS ELECTROMAGNETIC INTERACTION CONST.) WHICH HAVE QUADRATIC DEVIATIONS (THOSE ARISING DURING INTEGRATION WITH RESPECT TO LARGE MOMENTA FOR THE VIRTUAL W BOSON AND THOSE WHICH ARISE DURING INTEGRATION WITH RESPECT TO THE HIGH MOMENTA FOR THE VIRTUAL GAMMA QUANTA) WERE EVALUATED.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--THE EFFECT OF MISHMETAL ON THE STABILITY OF ALLOYED CAST STEEL AT  
LOW TEMPERATURES -U-  
AUTHOR--(05)-BRAYNIN, I.YE., Pilyushenko, V.L., KHARCHENKO, V.A.,  
Kladnashchev, A.I., GASHUTIN, V.P.  
COUNTRY OF INFO--USSR

SOURCE--KIEV, TEKHNOLUGIYA I ORGANIZATSIYA PROIZVODSTVA, NO 1, 1970, PP  
49-50  
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHROMIUM ALLOY, MANGANESE ALLOY, MOLYBDENUM ALLOY, CAST STEEL,  
IMPACT STRENGTH, DUCTILITY, MECHANICAL PROPERTY, LOW TEMPERATURE METAL,  
MISCH METAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1999/1313

STEP NO--UR/0418/70/000/001/0049/0050

CIRC ACCESSION NO--AP0123272

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC-ACCESSION NO--AP0123272

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESEARCH RESULTS ARE GIVEN ON THE EFFECT WHICH MISHMETAL HAS ON THE PROPERTIES OF MANGANIFEROUS, CHROMMANGANESE, AND CHROMMANGANESE MOLYBDENUM GRADES OF STEEL AT TEMPERATURES BELOW ZERO. IT IS SHOWN THAT THE INTRODUCTION OF MISHMETAL INTO CAST ALLOYED STEEL RAISES ITS IMPACT DUCTILITY AT ROOM TEMPERATURE AND AT TEMPERATURES BELOW ZERO. THE BEST COLD STABILITY IS EXHIBITED BY STEEL ALLOYED WITH THE FOLLOWING COMPLEX OF ELEMENTS: CHROMIUM, MANGANESE, MOLYBDENUM, AND MISHMETAL.

UNCLASSIFIED

USSR

UDC 621.396.677:823.164

AMUNOV, A. G., GASICH, YE. V., ZAYATS, A. L., KOROBV, B. S., DORFMAN, N. YE.,  
VINOGRADOV, L. I.

"Rotating Mount"

USSR Author's Certificate No 271952, Filed 3 Mar 69, Published 1 Sep 70 (from  
RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B86P)

Translation: A rotating mount for large-scale radio telescopes is introduced.

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USSR

UDC: 621.9.048.4

MOROZENKO, V. N., ONUFRIYENKO, I. P., GASIK, L. N., ZHURA, V. I., MOLCHANOVA, L. V.

"Electrospark Production of Polymetallic Compositions"

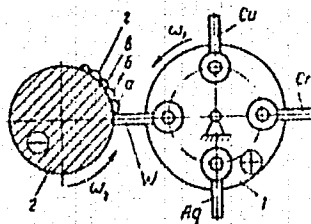
Kishinev, Elektronnaya Obrabotka Materialov, No 4(46), Aug/Sep 72, pp 8-12

Abstract: The paper gives the results of experimental studies of electrospark formation of polymetallic compositions produced by the set-up shown in the figure. Hinged to rotor 1 are anode rods of tungsten, copper, chromium and silver. Swinging out as the rotor turns, the anodes periodically approach the surface of cathode 2. By properly combining the rotational velocities  $\omega_1$  and  $\omega_2$  on the one hand, and velocity  $\omega_1$  and the pulse repetition frequency of the spark oscillator on the other hand, the transfer of anode material can be regulated so as to form overlapping alloyed zones a, b, c, d. Experimental studies show that this method of alloying can be used to produce intermetallic compounds in surfacing which cannot be made in any conventional metallurgical process. By proper selection of parameters, surfaces with any desired physical properties can be produced.

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MOROZENKO, V. N. et al., Elektronnaya Obrabotka Materialov, No 4(46),  
Aug/Sep 72, pp 8-12



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USSR

UDC 669.712.4

GASIK, M. I., YEMLIN, B. I., KLIMKOVICH, N. S., and KHITRIK, S. I.

Electric Smelting of Aluminosilicates (Elektroplavka alyumosilikatov), Moscow, "Metallurgiya" Press, 1971, 304 pages, 62 illustrations, 92 tables, 329 bibliographic references

Translation of Annotation: The book is an attempt to correlate the results of new theoretical and experimental (both laboratory and production-scale) studies performed by the authors on methods for processing aluminosilicates to electrolytic corundum, technical-grade alumina, aluminum alloys, ferro-silicon, refractories, and other materials. A critical comparative analysis of related works (and their results) by other researchers in aluminosilicate applications is presented. The book is intended for the engineering, technical and scientific personnel of nonferrous and ferrous metallurgy, and the chemical and abrasives industries engaged in electrothermics. It may also be useful to students of higher and secondary educational institutions specializing in the field of electrothermics of inorganic materials.

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GASIK, M. I., et al., Electric Smelting of Aluminosilicates (Elektroplavka alyumosilikatov), Moscow, "Metallurgiya" Press, 1971, 304 pages, 62 illustrations, 92 tables, 329 bibliographic references

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GASIK, M. I., et al., Electric Smelting of Aluminosilicates (Elektroplavka alyumosilikatov), Moscow, "Metallurgiya" Press, 1971, 304 pages, 62 illustrations, 92 tables, 329 bibliographic references

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USSR

UDC 669.71.053.24(02)

GASIK, M. I., YEMLIN, B. I., KLIMKOVICH, N. S., and KHITRIK, S. I.

"Electrosmelting of Aluminosilicates"

Elektroplavka alyumosilikatov (cf. English above), Moscow, "Metallurgiya" (Metallurgy), 1971, 304 pp, ill, 1 r. 5 k. (from RZh-Metallurgiya, No 1, Jan 72, Abstract No 1G114K from summary)

Translation of Abstract: The book summarizes the authors' original theoretical and experimental laboratory and industrial experiments in aluminosilicate processing according to a scheme devised for the purpose of obtaining synthetic corundum, commercial  $Al_2O_3$ , Al alloys, Fe-Si, refractories, and other products. A critical comparative analysis is presented of the published results of the investigations of other authors in the field of aluminosilicate utilization. Sixty-two illustrations. Ninety-two tables. Bibliography with 329 titles.

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USSR

UDC 669.295.053.2

GASIK, M. I., KLIMKOVICH, N. S., PORADA, A. N., LIBERANT, G. I.

"Problem of Solid Solution of Oxygen Compounds of Titanium in Electrocorundum"

Metallurgiya i koksokhimiya. Mezhd. resp. nauchno-tekhn. sb. (Metallurgy and Coal-Tar Chemistry. Interdepartmental Republic Scientific and Technical Collection), 197, vyp. 21, pp 43-46 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G229)

Translation: The temperature dependence of the solubility of  $Ti_2O_3$  (in mole %) in solid electrocorundum  $\lg N_{Ti_2O_3} = -4,320/t + 2.56$  is obtained, and it is demonstrated that the limiting possible concentration of  $Ti_2O_3$  in  $\alpha-Al_2O_3$  near the melting point of  $Al_2O_3$  is doubly high according to the data of previous experiments. The x-ray method was used to determine the variation of the interplane spacing in the lattice of electrocorundum as a function of the gross content of Ti oxides in it recalculated as  $TiO_2$ . The decomposition of the supersaturated solid solution of  $Ti_2O_3$  in electrocorundum determines the magnitude of anomalous expansion of the normal electrocorundum grain. The article contains 1 illustration, 1 table, and a 9-entry bibliography.

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USSR

UDC 669.71.053.24(088.8)

KHITRIK, S. I., CASIK, M. I., VUKOLOV, YE. A., KLIMEKOVICH, N. A.,  
PORADA, A. N., LAGUNOV, YU. V., POLONSKIY, S. M., IORDANOVA,  
Z. A., MALYSHEV, V. I., YEMLIN, B. I., KASHKUL', V. V., MASEKOV,  
V. P. TSEYMAKH, N. L., YEM, A. P., CHERNYSH, F. I., and KOLNOGU-  
ZENKO, V. A., Dnepropetrovsk Metallurgical Institute

"Method of Smelting Abrasive Electrolytically Produced Corundum"

USSR Author's Certificate No 263635, filed 15 Oct 65, published  
10 Jun 70 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11  
G101 P)

Translation: A method is proposed for smelting abrasive elec-  
trolytically produced corundum in a thermal furnace which involves  
deep fusion of alumina-containing charge with reducing agents.  
To increase the abrasive properties of corundum and to obtain  
in it a Ti oxide content of  $\leq 1\%$ , smelting is carried out on  
kaolin presintered with Fe-ore additive or scale in the amount  
of 20-30 wt % of the charge.

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1/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--THERMODYNAMICS OF THE REDUCTION OF CHROMIUM OXIDE BY SILICON -U-  
AUTHOR--(03)-GASIK, M.I., EMLIN, B.I., KHITRIK, S.I.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CERN. NET. 1970, 13(3), 59-62  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, CHEMISTRY  
TOPIC TAGS--THERMODYNAMICS, SILICON, CHROMIUM OXIDE, SLAG  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1999/1648 STEP NO--UR/0148/70/013/003/0059/0062  
CIRC ACCESSION NO--AT0123486  
UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70  
 CIRC ACCESSION NO--AT0123486  
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. METALLIC PHASE CONTG. CR  
 62.7PERCENT, SI 6.13PERCENT, AND FE 21.2PERCENT WAS EQUILIBRATED AT  
 1600-1880DEGREES WITH SLAGS CONTG. 24.5-66.2PERCENT CRO AND  
 33.8-75.5PERCENT SIO SUB2. FOR 3 SLAG COMPNS. THE EQUIL. CONST. AND  
 THERMODYNAMIC PARAMETERS OF THE REACTION 2 CRO PLUS SI YIELDS 2 CR PLUS  
 SIO SUB2 WERE EVALUATED. SDEGREES FOR CRO AT 1600-1880DEGREES WAS 49.19  
 KCAL-MOLE-DEGREE, AND THE EQUIL. TEMP. OF THE 3 CRO YIELDS CR SUB2 O  
 SUB3 PLUS CR REACTION IS SIMILAR TO 1490DEGREES. THE DECOMP. REACTION  
 3 CR SUB3 O SUB4 YIELDS 4 CR SUB2 O SUB3 PLUS CR SUGGESTED BY KOCH WAS  
 CRITICIZED AND SHOWN AS NOT REAL FROM THE VIEWPOINT OF THE PRESENT  
 THERMODYNAMIC DATA. THE PLOT OF LOG P SUBO (P SUBO EQUALS PRESSURE OF  
 O) VS. TEMP. CALCD. FOR THE CR-O SYSTEM; THE EXISTENCE REGIONS OF CRO  
 AND CR SUB2 O SUB3 ARE SHOWN. BELOW 1760DEGREES CRO IS UNSTABLE AND CR  
 SUB2 O SUB3 IS REDUCED DIRECTLY TO CR WHEREAS ABOVE THIS TEMP. STEPWISE  
 REDN. THROUGH CRO OCCURS. FACILITY: DNEPROPETROVSK. MET. INST.,  
 DNEPROPETROVSK, USSR.

UNCLASSIFIED



1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--ALLOY ELEMENT WASTE IN HIGH SPEED STEEL MELTS -U-

AUTHOR--(04)--CHUYKO, N.M., GASIK, M.I., ZAOZERNYY, N.T., PARKHOMENKO, G.P.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, METALLURG., NO 5, MAY 70, PP 22-24

DATE PUBLISHED----MAY70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--HIGH SPEED STEEL, METAL MELTING, ALLOY DESIGNATION, STEEL  
SCRAP, TUNGSTEN STEEL, VANADIUM STEEL, CHROMIUM STEEL, METALLURGIC  
RESEARCH FACILITY, ARC FURNACE/(U)R9 HIGH SPEED STEEL, (U)R12 HIGH SPEED  
STEEL, (U)R18 HIGH SPEED STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3007/0407

STEP NO--UR/0130/70/000/005/0022/0024

CIRC ACCESSION NO--AP0135880

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135880

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ALLOYING OF HIGH SPEED STEEL IN ELECTRIC ARC FURNACES IS ACCOMPANIED BY SUBSTANTIAL LOSSES OF SUCH ALLOYING ELEMENTS AS TUNGSTEN, VANADIUM, AND CHROMIUM. THE PURPOSE OF THIS ARTICLE IS TO CLARIFY THE BASIC CAUSES OF INCREASING LOSSES IN TUNGSTEN AND OTHER ALLOYING ELEMENTS DURING THE ELECTRIC ARC PROCESS. IN THE COURSE OF THIS STUDY, A STATISTICAL ANALYSIS WAS MADE OF 479 ALLOYS OF R18, R12, AND R9 STEEL AT AN UNIDENTIFIED PLANT IN 1968. THE SELTS WERE MADE IN FURNACES WITH CAPACITIES OF 7.5 AND 17.5 TONS. THE R18 STEEL CONTAINED 50PERCENT HIGH SPEED STEEL SCRAP AND THE REQUIRED QUANTITY OF FERROTUNGSTEN; THE R12 AND R9 STEELS WERE OBTAINED BY REMELTING THE SCRAP. THE STATISTICS SHOWED THAT THE TUNGSTEN LOSS WAS FROM 8 TO 13PERCENT, THE VANADIUM LOSS 18-28PERCENT, AND THE CHROMIUM LOSS ABOUT 13PERCENT. AN ACCOMPANYING TABLE SHOWS THE LOSSES FOR EACH ELEMENT IN PERCENTAGE, KOLOGRAMS PER METER, AND RUBLES PER METER FOR THE THREE STEEL TYPES. THERE IS ALSO A TABLE GIVING THE RESULTS OF R18 SMELTING IN A 7.5 TON CAPACITY ARC FURNACE. FINALLY, THERE ARE THREE CURVES SHOWING THE LOSS OF TUNGSTEN IN ALLOYING R18 STEEL AS A FUNCTION OF THE DURATION OF THE SMELTING PERIOD, OF THE TIME OF YEAR, AND OF THE DURATION OF R18 SCRAP REMELTING. FACILITY: DNEPROPETROVSK METALLURGICAL INSTITUTE.

UNCLASSIFIED

Steels

USSR

UDC 669.187.2:669.046.5L8.2

CHUYKO, N. M., GASIK, M. I., ZAOZERNYY, N. T., PARNOMENKO, G. P.,  
Dnepropetrovsk Metallurgical Institute

"Alloy Element Waste in High-Speed Steel Melts"

Moscow, Metallurg., No 5, May 70, pp 22-24

Abstract: The alloying of high-speed steel in electric-arc furnaces is accompanied by substantial losses of such alloying elements as tungsten, vanadium, and chromium. The purpose of this article is to clarify the basic causes of increasing losses in tungsten and other alloying elements during the electric-arc process. In the course of this study, a statistical analysis was made of 479 alloys of R18, R12, and R9 steel at an unidentified plant in 1968. The melts were made in furnaces with capacities of 7.5 and 17.5 tons. The R18 steel contained 50% high-speed steel scrap and the required quantity of ferrotungsten; the R12  
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USSR

CHUYKO, N. M., et al., Metallurg., No 5, May 70, pp 22-24

and R9 steels were obtained by remelting the scrap. The statistics showed that the tungsten loss was from 8 to 13%, the vanadium loss 18-28%, and the chromium loss about 13%. An accompanying table shows the losses for each element in percentage, kilograms per meter, and rublos per meter for the three steel types. There is also a table giving the results of R18 smelting in a 7.5-ton capacity arc furnace. Finally, there are three curves showing the loss of tungsten in alloying R18 steel as a function of the duration of the smelting period, of the time of year, and of the duration of R18 scrap remelting.

2/2

UDC 547.26\*118+547.1926

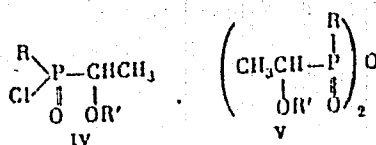
USSR

GAZIZOV, M. B., SULTANOVA, D. B., RAZUMOV, A. I., OSTANINA, L. P., and  
GALYAUTDINOVA, A. A.

"Interaction of the Dichlorides of Trivalent Phosphorus with Acetic Anhydride  
in the Presence of  $\alpha$ -Chloroethers"

Leningrad, Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973, p 213

Abstract: Dialkylchloro phosphites react with the anhydrides of carboxylic acid (I) with the formation of  $\alpha$ -ketophosphonic esters (M. B. Gazizov, et al., ZhOKh, No 39, 2600, 1969). The compounds (I) and the dichlorides of trivalent phosphorus (II) react slowly with each other at room temperature and more intensely at 50° with the formation of polymer products. However, in the presence of  $\alpha$ -chloroethers (III) at 50° for 10 hours, the compounds (I) and (II) form the corresponding acid chlorides (IV) and anhydrides (V) of  $\alpha$ -alkoxyethyl phosphonic and phosphonous acids.



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USSR

GAZIZOV, M. B., et al., Zhurnal Obshchey Khimii, Vol XLIII (CV), No 1, 1973,  
p 213

The yields of the products (IV) and (V) depend strongly on the ratio of the initial compounds (I) and (II). Some physical-chemical properties of the compounds and the schematic for obtaining compound (IV) are presented.

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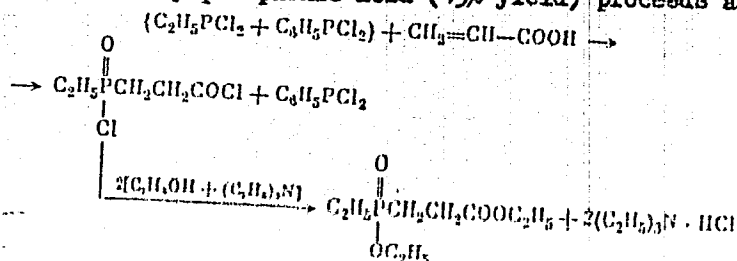
UDC 547.241.547.391.1

GASIZOV, T. KH., PASHINKIN, A. P., DMITRIYEVA, G. V., TUZOVA, L. L.,  
KHAYRULLIN, V. K., and PUDOVIK, A. N., Institute of Organic and Physical  
Chemistry imeni A. Ye. Arbuzova, Academy of Sciences USSR

"Reactions of the Acyl Culonides of Trivalent-Phosphorus Acids with  
 $\alpha, \beta$ -Unsaturated Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 8, 1972, pp 1730-1733

Abstract: A detailed study was made of the mechanism of the title reactions with special reference to behavior of the P atom of the chlorophosphines. The simultaneous reaction of the acrylic acid with equimolar mixtures of phenyl- and ethyldichlorophosphine (PDP and EDP, respectively) and the subsequent reaction with ethanol and triethylamine to form the ethyl ester of ethyl- $\beta$ -carboethoxyethylphosphonic acid (45% yield) proceeds as follows:



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GAZIZOV, T. KH., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 8, 1972, pp 1730-1733

An analogous reaction occurs between PDP and ethyldichlorophosphite. On the other hand, EDP, when treated with a mixture of acrylic and metacrylic acids reacts only with the former which is a strong electrophil. These two observations support the assumption that the P atom has a nucleophilic character. Thermal analysis and NMR data on  $P_2I_4$  were used to elucidate the nature of the intermediates. IR spectra were also discussed.

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UDC: 6.74

GASKAROV, D. V.

"Predicting Change in the Working Capacity of Technical Systems"

V sb. Osnovn. vopr. teorii i praktiki nadezhnosti (Basic Problems in the Theory and Practice of Reliability--collection of works), Moscow, "Dov. radio", 1971, pp 247-263 (from EZh-Kibernetika, No 1, Jan 72, Abstract No 1V1027)

Translation: Methods of analytic and probabilistic prediction of the change in working capacity of monitored objects are considered. Prediction effectiveness can be improved by using methods for processing the resultant information. It is shown that generalized parameters should be used for solving practical problems. Some results of prediction are given for different objects, and specific recommendations are made. Author's resumé.

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UDC 616.45-001.1/.3-07:616.831-008.9-097.5-078

IVANSHINA, A. Z., GASKIN, L. Z., and ORLOVSKAYA, D. D., Institute of Psychiatry, USSR Academy of Medical Sciences, Moscow

"Antibodies to the Brain in Stress"

Moscow, Zhurnal Nevropatologii i Psikhiatrii, No 7, 1973, pp 983-987

Abstract: Rats were stressed by keeping them isolated for 21 days and then placing them together with other animals (10 in a cage) for the same length of time. Change in the levels of blood 11-hydroxycorticosteroids (11-HCS) served as an indicator of stress. Antitissue antibodies were detected in serum using the complement-fixation reaction in the cold. Isolation markedly increased blood 11-HCS from the first day. The peak occurred on day 12 after which it returned to normal. Subsequent grouping of the animals resulted in a new increase in 11-HCS, with peaks on days 1 and 18. Antibodies to the liver were few in the isolation period, but they increased thereafter on days 12 and 21 relative to the control. Thus, under similar conditions stress stimulated the formation of antibodies to a barrier organ, the brain, sooner and in greater quantities than to a nonbarrier organ, the liver.

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REEL # 8  
FEDORCHENKO, IM  
to  
GASKIN, L.Z.